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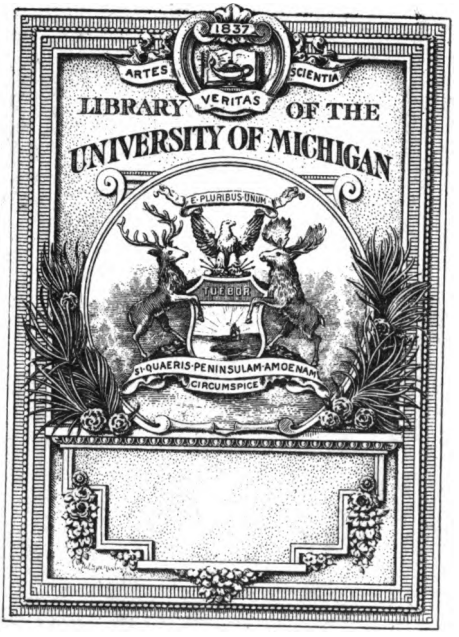

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THREE LECTURES

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ON

HOMŒOPATHIC PHARMACEUTICS

BY

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PREFACE.

The following three lectures, delivered a number of years ago to the classes of the Homœopathic College of Philadelphia, I have concluded to publish, under the impression that I may thereby confer a service on many. The immediate reasons, however, for doing so, are the many inquiries and questions which we receive in our extended business on the preparation of our remedies. These questions often require long letters, and cannot after all be so fully and exhaustively answered as it is done in these lectures.

It was my aim to make these lectures as plain and simple as possible, and to the point; they are printed just as they were read before the classes, with the exception of a part of the third lecture, where I wished to bring the preparation of tinctures still more in accordance with the pharmacopœia polyglottica. This work has since been adopted by nearly all the Continental (European) Homœopathic Societies, and is also, as I have

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reason to believe, in accordance with the forthcoming Homœopathic Dispensatory of the American Institute. Here and there further explanations have been added as foot notes, and also as indications of such changes as have since been made.

These lectures on *General Pharmaceutics* are intended merely for the doctor's office, for which purpose I think they will be found sufficient; they were not intended when held, nor are they intended now for pharmacists. The lectures on *Special Pharmaceutics* have not been included in this pamphlet, else it would have acquired more the nature of a pharmacopœia, a work which I do not feel called upon to furnish on my own responsibility.

F. E. Boericke.

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LECTURE FIRST.

GENTLEMEN:

The Art of Preparing Medicines is a branch of the Art of Healing.

In former centuries the physician had to spend a large part of his time in the preparation of the medicines which he administered to his patients, in fact he had to be part pharmaceutist. But soon there came a division of labor; the manual work was given to the apothecary in order to give the physician more time for the mental part of his task; the physician then wrote out his prescription and sent it to the man who was skilled in making such preparations, and who was able to procure the necessary ingredients to better advantage.

This is the practice followed by the Old School to this day. In the New School, though we cannot boast of many centuries, we see something similar: Hahnemann and his immediate disciples made their own medicines, but the Homœopathic profession at this day are in some countries even compelled by *law*, while in other countries like our own, they are led by *choice* to obtain their medi-

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cines or at least the greater part of them from the pharmacies.

Now, gentlemen, a man may be a very good marksman, without being able to construct a rifle himself or without ever having made powder; he buys his ammunition in the gunshops; but it is essential to him to know (to be a *judge* of) the qualities of a good rifle, or of those of good powder and of a perfect cartridge, or else he will have but poor success in spite of all his skill. Therefore, just as it is important for the marksman to have a good rifle and perfect ammunition, so it is important for the physician, and in fact a thousand times more so, to have perfect medicines, or else he may miss fire in a most critical moment, and from the want of a genuine or properly prepared medicine, lose his patient, and his reputation in the bargain.

A Homœopathic physician at the present time, as just said, is not any more obliged like Hahnemann and his immediate followers to *make* his own tinctures, triturations and dilutions, but under all circumstances he ought to know *how* they are made, so that if he prefers, or in case of need he may be able to make them himself, and also to be able as far as that is possible, to distinguish the spurious from the genuine article.

To explain and to show these two things, will be the object of my lectures.

Before however discussing these objects *practically*, let me first lay down the *principles* which must guide us in the preparation of our medicines, and which principles we have to follow *under all circumstances* if we would not fail utterly.

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By comparisons we often see things in a clearer light; let us therefore take a glance at the medicines of the Old School.

An Allopathic physician in his attempt to cure his patients, looks to classification; the name of a disease answers with him for a certain whole range of symptoms, and the medicines therefore by which he expects to cure his patient, are also divided into certain general classes. We read in the Materia Medica of the Old School of stimulants, astringents, tonics, etc. The stimulants are again subdivided into arterial stimulants, cerebro-nervous stimulants and anti-spasmodics. Then again they have sedatives, emetics, cathartics, diuretics, diaphoretics, expectorants, and so on, and so on. By studying the principles of this classification, we find that in the Old School they have respect only to the general and most marked symptoms of a medicine, disregarding all peculiarities. It is true, one of the remedies may have two or more, or many of the properties just mentioned, but still according to these or like general symptoms their Materia Medica is arranged, and according to such knowledge and means their medicines are classified. The specific difference between the various astringents or purgatives in their eyes, is simply one of more or less violence, of vehemence or of mildness.

If then an Allopathic physician prescribes his medicine or compound (mixed up *secundum artem* very often into something very nauseous), and this has the expected and desired effect of an emetic, a purgative, a tonic or diuretic, he has every reason

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to be satisfied with the action of the remedy exhibited, for this was what he wanted and the medicine served his purpose. The medicines of the Old School may be perfect in their way, that is they are adapted and suitable to the wants, purposes and ends of that school. Aloes, rhubarb, magnesia and different salts, are cathartics; if they possess this quality in a satisfactory degree, both the physician and the druggist are satisfied. If the one quality of a plant, or may be two or three by which it is registered in the allopathic text-books, is preserved after a process of drying or baking, or after decoction or distillation, then the dried plant, or the extract, or the decoction, or the distillation may be used, for no fault can be found with it; it becomes a mere matter of choice or even fancy with the prescriber, as to the different forms of this one remedy.

With the Old School even *substitutes* will do.

But in the New or Homœopathic School, neither the diseases nor the remedies are thus classified in a general way. The Homœopathist in the selection of his remedies, does not take into consideration the general symptoms of the disease only, but also the most particular symptoms with which the disease manifests itself, and which may be different with every individual.

In the Old School, the knowledge of the action of a drug is necessarily limited to a few leading symptoms produced immediately after the application of it (and, as was said, their medicines are prepared in accordance with this knowledge and with

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these expectations); but the knowledge of the action of a drug in the Homœopathic School, obtained by long, careful observations and even sufferings on the part of those devoted persons, the provers, is of an altogether different character.

You, gentlemen, have perhaps yourselves made some provings, but even if you have *not*, you have in the study of your Materia Medica found out by experience how slow, laborious and tedious is the process of learning, remembering and retaining the detailed action of our drugs. Can, I ask you, a medicine prepared merely to suit the gross and material ideas of an allopath, be the proper agent for the application of the ideas and knowledges *you* have of that drug under the same name? No, there is a radical difference in the principles of the two schools, and therefore there is and must be a difference in their respective preparations.

And what is the grand principle of Homœopathic Materia Medica which applies here? It is, that our knowledge of the curative actions of our remedies are based on the provings of the healthy, and that those provings are carried out into details and minutiæ, and these provings were obtained by certain bodies prepared in a certain way. If we wish to obtain these symptoms in their genuineness, we must employ the same substance prepared in the same way; therefore the grand principle of Homœopathic Pharmaceutics is to reproduce the original, or to produce a preparation as near like the original substance, which had first produced those symptoms with all their particulars, as it can possibly be made.

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Further, the provings of a certain body have been made, and the positive action of that body ascertained. If that body had been prepared in another way, certain differences in the provings might have resulted, and if that body had been prepared in a third way, the provings, though perhaps they would have been similar in the main, might still have shown quite appreciable differences. As our cures are based on the most minute observations of such action, if we change the mode of preparation the results are changed, and you will see where you will be left, if you learn the action of our drugs, and then get drugs differently prepared from those which had been proved.

I will illustrate this by an example. Take one of our polychrests, Pulsatilla. This is employed in the Old School and in the New. The Old School prepares its tincture from the same plant exactly, but dried; we make it from the fresh living plant. Pulsatilla in its fresh living state has an acrid caustic volatile principle, which is nearly lost when dried. Our provings are based on the tincture prepared from the fresh plant, and they incorporate all those many symptoms produced by that caustic volatile principle. If you would then prescribe a tincture of Pulsatilla from the dried plant, you would have a preparation which in its action would be minus those many symptoms produced by that volatile principle. And which are those symptoms? You would be altogether at sea, and your knowledge of Materia Medica of a body prepared in a manner altogether different, would avail but little.

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I trust that I have made plain to you the utter necessity of holding to our principle of preparing our medicines exactly as the substances proved were prepared. To this principle we have to adhere tenaciously, even if we should incur the odium of being considered somewhat old fogyish.

If a substance proved was prepared in a certain way, we cannot change that way altogether, except we obtain new confirmatory or corroborative provings.

And right here, gentlemen, before I proceed, let me say one word as a pharmacist about provings. If you ever prove a drug, be very exact as to the statement, where and how it was obtained. If it be a plant, be accurate in its description, compare it well with your botany, state the locality where you found it or may be where it generally grows. Whether the plant was flowering or fruiting. Give particular directions from which part of the plant you made your preparation; whether the whole plant, the root, the stem, the leaves, the flowers or the seed. If you made a tincture of it state how, state the quantity of the alcohol used, and whether strong or dilute; this is by no means unimportant if a uniform preparation is to be obtained. If your proved medicine be a chemical substance, state the exact way in which it was obtained, its chemical formula, and the name of the chemist who prepared it.

If you do not attend to this advice and introduce a new medicine to the notice of your professional brethren, do not complain afterwards if they

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do not succeed as well as you did with that remedy, and be not disappointed that your labor in bringing out that remedy has proved futile.

Excuse this branching out into the Institutes of Homœopathy.

To continue: Before we adopt in the pharmacy a new though seemingly better way of preparing our drugs, let us rather hesitate, and let us not jump at every new thing which progressive science has found out for the Old School. Do not misunderstand me however; of course Homœopathy is progressive, it is the embodiment of medical progress, it is progressive in all its branches, and therefore also in pharmaceutics; but the progress must be in accordance with Homœopathy itself, and its avowed principles; such progress let us by all means and forthwith accept.

Here is an example: Hahnemann to obtain metals in a suitable form for triturations, took in some cases a piece of the pure metal, and rubbed that under water on a wet stone until he had obtained a grain or two with which to start his trituration. This process is objectionable for various reasons, and so Stapf, one of Hahnemann's earliest disciples, introduced the better method of employing the metals precipitated from their salts in solution. By this we have the metals not only much purer, but also in a better form for trituration. Various other improvements have been introduced to which I may refer in future lectures under their proper heads. One more I may mention here particularly, and this is the potentiation

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according to the decimal scale, which, as far as the *triturations* are concerned, is a decided improvement, and was introduced by your Professor of Materia Medica, Doctor Hering.

In everything good which we attempt to perform, it is well to look first at ourselves and see whether we are prepared to do it. Before, therefore, beginning with the subject of manipulations, I trust you will excuse me if I indulge in a few personal remarks. If you want to make a Homœopathic preparation, make up your mind beforehand to do the thing right! Do positively only one thing at the time! Be exact! Take your time in doing it! Do not think that will do, that is good enough; I tell you that will not do. Do it according to the rule.

Further: Be clean! look at your hands, look at your coat, look at your table before you, suffer no dirt and no dust. Have plenty of room on your table; put on it everything in readiness which you may need for that preparation. And after you have started your work, do not suffer yourself to be easily interrupted, but bring it to its end.

As to the temperature, I have to remark that several of our mother tinctures will become turbid or get a muddy sediment, or will undergo other alterations such as forming crystals by being exposed to great cold. On the other hand too much heat may also injure our preparations, therefore avoid extremes as much as you can; but let your

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room where you keep or prepare your medicines be of a moderate, comfortable temperature. (In my travels I have several times seen medicine cases filled with medicines placed on the mantel-piece and a rousing fire in the grate; a worse place could not have been selected in the office).

It is more cheerful to work in a well lighted room (good light also prevents mistakes), but the direct rays of the sun should not fall upon your preparation. The rays of the sun have a powerful chemical action; there are few mother tinctures which, if exposed for some time to the sun, would not change their color, form precipitates, etc., a proof that they have undergone some change, and what we actually see going on with our crude substances, we may reasonably infer may go on with our potencies, though this is of course not demonstrated *per oculos.* Even strong reflected light or long continued daylight affects many of our chemicals, as for example some of our mercurial preparations. You will be on the safe side if you treat every medicine, no matter what substance or potency, as if it would be easily injured by any influence, whether dirt, dust, light, heat or smells; keep your medicines protected from all these influences.

If you have frequently to handle a bottle containing a preparation very susceptible to light, you had better cover the bottle altogether with a solution of asphaltum or black varnish; bottles are also frequently covered with tin-foil, but this is not

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so effective. Avoid blue-colored bottles, as blue light has a certain dynamic effect.*

Cigars, tobacco and such things may do injury in more than one way; of course they are out of the question while or where you are preparing your medicine.

We have to deal with two kinds of bodies, medicinal bodies and indifferent ones; the latter are at least supposed to be so i. e. non-medicinal; they are used as vehicles only and to develop the inert power of the drug. Of these non-medicinal substances we shall speak first; they are three, representing the great kingdoms of nature from which they are taken, i. e. *Water* from the mineral kingdom, *alcohol* from the vegetable, and *sugar of milk* from the animal kingdom.

Water is the most indifferent of our vehicles, and is the great solvent of almost everything; but because it is so great a solvent, it is exceedingly

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* Since these lectures were written, there have been introduced by the German pharmacists *amber colored bottles*, upon the plea that the yellow or amber color excludes the actinic or chemical rays of light, and therefore that the contents are thus perfectly protected against any action from that source. We have also introduced them since 1874 on the same ground, and the profession has kindly taken to them, so that they are now pretty generally used. I must openly confess I do not admire them much, as they have the disadvantage that you cannot distinguish the color of your preparation, they all look alike in your amber colored bottles, and for the rest, though they do exclude the blue actinic rays, it remains to be proven first whether the yellow color in itself has not some action, and whether it does not affect our medicines just as much on the one side as it protects them on the other. I look at it more as one of the fashions of the day.

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difficult to procure water absolutely pure. In the pharmacy we use only distilled water. You will find in the pharmacopœia the direction to distill the water in glass or porcelain stills; this is not good. Water distilled through glass or porcelain alembics, will show a cloud after a few days. This is Silex, which is dissolved by the steam; water does not dissolve any part of the glass, but steam will, as you can verify by any steam guage. Metallic stills should therefore be used.

A clean copper still with a receiver of block-tin, is in the trade and may answer your purpose, though by a fine chemical test, most likely traces of copper may be demonstrated; we use in our pharmacy a copper still lined with gold, with a receiver or worm also gold lined. This insures purity as far as this is possible.

The first quart or quarts coming over are not used, nor do we distill more than about two-thirds or three-quarters of the water. The best test for your distilled water is, whether it keeps; if it is turbid or has any kind of smell, it has become spoiled and cannot be used any longer for our purposes. Of course it has to be kept in glass stoppered bottles, as cork would soon draw mould and contaminate the water.

We use water for chemical operations, also in the potentizing of acids, and for the solution and potentizing of triturations and salts. You will further make use of water for a smaller division and convenient mode of dispensing a dose of medicine; for this, distilled water is not used, but the

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water which your patient is accustomed to drink. In localities which are marshy, or where the spring water is hard or brackish, rain water should be used instead, or the medicines should be given without any water.

The next vehicle is *alcohol.* You are familiar with this product of fermentation. Like water, it is seldom pure, and science and ingenuity have been taxed for adulterations. The impurities and adulterations we meet with most frequently, are *acetic* or other acids, chlorine or chlorine metals, fusel oil and water. The presence of acids is detected by means of litmus paper. Chlorine metals will, on the addition of a few drops of the solution of nitrate of silver, give a white cloud settling as a white precipitate: the chloride of silver. To see how much fusel oil the alcohol contains, for traces of it you will find in all alcohols, add to a quantity of alcohol, about one-fourth or one-fifth of a solution of nitrate of silver, and expose the mixture to the sun's rays; the more fusel oil the alcohol contains, the darker will it become, and after a few days there will settle a blackish precipitate. The quantity of water is of course demonstrated by the alcoholmeter. There are other impurities incorporated in the alcohol which are more difficult to detect. In the drug stores or pharmaceutical laboratories for example, alcoholic extracts are distilled over to regain the alcohol; such an article would of course spoil any of our Homœopathic preparations.

We make use of alcohol in the pharmacy in

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many ways, but principally in making tinctures, and in diluting or potentizing medicines. Alcohol for the use of potentizing, should not be weaker than 80° centigrade; in some instances, however, this would be too strong, as for example in making some first dilutions; in this case it has to be reduced with distilled water to about 50°. Also in making tinctures different degrees of alcohol are often of great advantage, and in the course of these lectures frequent reference will be made to this matter of the strength of alcohol.

Sugar of Milk is obtained from cows' milk; it is the sweet principle in the whey. It comes to us mostly from Switzerland, where it forms one of the industries connected with producing cheese. After boiling down the whey, the product is subjected to clarifications and crytallizations, and finally it comes to us in such sticks as you see here, 12 to 20 inches long, and 1 to 2 inches thick. For Homœopathic use it has to undergo a further recrystallization; this is either done again with water solely, or after the clarification and filtration, alcohol is added. The first kind is the common refined Homœopathic Sugar of Milk, the second kind (please pass the sample round) you obtain at the pharmacies under the name of precipitated Sugar of Milk. After drying, the sugar is coarsely powdered in a wedgewood mortar, and then finely pulverized in a mill kept only for this purpose.

Sugar of Milk is used for making our triturations, which will be treated of in our next lecture. It is

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further largely used for making up our powders, and finally as a dietetic article; for the latter purpose it is important in the food for infants. Cows' milk contains more caseine and less sugar of milk than human milk; to bring up cows' milk to the same chemical proportions as human milk, add to one pint of pure cows' milk one pint of boiling water, in which one ounce of sugar of milk has been dissolved. In Italy sugar of milk is also often prescribed to consumptives, where in this country cod liver oil would be given. Sugar of milk must be kept in a dry place, as when damp it becomes musty.

It remains yet for me to add another vehiculum, the pellet or globule. Globules are made of pure cane sugar by a very simple mechanical process; either by hand or machinery. As you have perhaps not seen the manufacture of pellets, I will describe it. By hand they are made as follows: A large copper pan is suspended so that it will swing easily and in all directions over a coal fire. The bottom of the pan is covered with pulverized cane sugar, to which are added a few spoonfuls of a syrup made of the same sugar and water. This is thoroughly mixed and rubbed with the hand, and the pan is turned and swung so that the contents are continually in a rotary motion. This will start the smallest size, and by rubbing the mass further with the hand, keeping the whole in continous motion, turning and rotating the pan, and adding occasionally syrup and finely powdered sugar, the size of the pellets is increased. All

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these motions, however, can be produced just as well by machinery, and the pan can be heated better with steam than over a fire; I would decidedly give the preference to steam-made pellets on the ground of cleanliness. The hands of the attendant making hand-made pellets have to be continually in the pan, and of course perspiring freely, the perspiration will go into the pellets; besides the work necessary for keeping up the fire within a foot or two of the open pan, exposes the pellets to impurities from the coal, dust and ashes. The various sizes are separated by passing the pellets through various sieves. To have a uniformity of pellets, the American Institute of Homœopathic Pharmacy has adopted the French measure. Ten pellets being placed in a line, the length of the line expressed in millimeters will determine the size of the pellets; the sizes range from about eight to eighty. Pellets should be made of nothing but pure cane sugar, the addition of anything else even of innocent things as starch, sugar of milk (sugar of milk alone will positively not form into pellets) must be considered as adulteration. Physicians want their pellets soft, whereas pure sugar pellets are pretty hard. To satisfy the demands of physicians, starch has been added by some; confectioners even add, to soften their nonpareil, a little cream of tartar or lemon juice. All such things are out of the question; even starch would interfere with iodine preparations.

The globules should be white, dry, hard, each number of equal size and not mixed with sugar

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dust. We use them as the most convenient mode for administering our medicines. They are moistened with the liquid potency in a suitable bottle, and well agitated and shaken until we are satisfied that every globule is saturated. The proportion of three drops of liquid to a drachm of globules is quite sufficient to wet every globule thoroughly. Hahnemann prescribes, that after saturating, the pellets should be taken out of the bottle on a clean piece of (blotting) paper, and after being dry, replaced again into the bottle. With our dry American atmosphere this is not necessary; if after saturation the vial is kept open and laid flat on the table, so that no dust can settle into it, after thirty minutes the superfluous liquid will all have evaporated.

As to the *utensils* which you will need in your practice: you will want some wedgewood mortars. Take large mortars, the larger the surface the better it is for the reduction or comminution of the drug; see that the bottom be as flat as possible and that the pestle also be thick and flat. You will further need scales, i. e., accurate scales; if you work merely by guess you will finally distrust your own preparations. You will also need drop measures or minims.

For vials Hahnemann recommends green glass, because the white often contains Arsenic; but green glass is now rejected entirely by the profession and only white glass is used. According to Buchner in his Pharmacopœia, green glass vials are hygroscopic, permitting the alcohol to evapo-

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rate and attracting moisture from the atmosphere. Tube vials are certainly very porous, and the thinner the vial the more so. You will find this often with your dilutions; your tube vials being full at first, after standing half a year a good portion will have evaporated, this did not all pass through the cork, for in moulded vials this takes place much less.

Some physicians prefer glass stoppered vials, that is, until they have found out what a nuisance they are. Nothing shuts a vial better than a good velvet cork; a glass stopper never can be made to fit all around the neck like an elastic cork. You will find very often glass stoppers which fit their neck only at two points, thus permitting the alcoholic contents to evaporate, to weaken and become sour, or if the temperature changes much from cold to warmth you will find your stoppers will become wedged in, and you will have trouble to get some of them open at all. I am sure that after a short trial with glass stoppers you will return to the honest cork.

See that your vials are not too thin and that their lips are prominent so as to drop well; a vial which has not a round mouth should be rejected, as no cork can fit it closely. Vials are measured by their capacity: we say one, two, four ounces, half ounce, two drachms, one drachm, etc., but all sorts of measures and shapes are used. For tube vials to have a uniformity the Institute adopted also the French millimeter measure. We call for example a tube vial No. 1040—when it is ten millimeters wide and forty millimeters long; putting

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both measures together and always putting the width before the length we call it No. 1040.

Right here one word about cleaning. Gentlemen, I do not believe in cleaning. Get your bottles new from the factory or from a house where you are sure that they get them directly from the factory, then you have to deal only with dust, and this is removed easily by shaking, cleaning with a small brush, washing and subsequent rinsing with alcohol. Never use one vial for two preparations; if our theory of potentation is correct, then there is not water enough in the Delaware to clean a bottle of the first preparation.

Of *corks* select the best quality; they ought to be tapered, but not too much. If you wish to clean your corks, this ought to be done with very dilute alcohol and then they should be well dried again. To use boiling water or steam them is injurious; they will look whiter it is true (and the whiteness of corkwood determines its quality) but they will become more bulky and by this loose their elasticity, become soft so that after a while they will fit your bottle very loosely. You ought to look repeatedly after your corks if you keep liquid medicines, refitting those vials in which the corks have become loose and replacing those worn out. If a cork breaks off and pieces fall into your vial throw away cork, vial and all.

Corks cannot be used for acids, Iodine, Kreosote and many other chemicals; with these of course glass stoppers have to be used. Neither can they be used for distilled water, as they would soon draw mould and render the water impure.

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LECTURE SECOND.

GENTLEMEN:

In the previous lecture I endeavored to explain to you the *principles* which should guide us in the preparation of our medicines, and I further gave you an outline of the indifferent or *non-medicinal* bodies, which we make use of in order to develop the powers of the drug, or which we use with the view of preserving or administering our medicines.

To-day we shall begin to treat of the transformation of drugs into Homœopathic remedies, or in other words, how the crude substances obtained from the inorganic and organic world are transformed into remedial agents, which shall contain the medicinal powers inherent in those crude substances, in such a state of development as will secure their ready and complete assimilation by the human body.

Our drugs are taken from the three kingdoms of nature; they are either in a liquid state or dry, soluble or insoluble. In order to transform drugs from their crude state into a state of development so as to act most powerfully on the human system, we employ various processes. Physiology teaches

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us that food in order to nourish our body must be brought by the digestive organs into a state of comminution and solubility; into a like state we have to bring our medicines.

By the process of triturating as prescribed by Hahnemann, our drugs are comminuted, and by this process also can we make any substances, even those which are commonly supposed to be insoluble, perfectly soluble in water and alcohol. This great discovery of Hahnemann is not yet recognized by modern science, nevertheless trituration is a truth, a most wonderful truth, and if I had to consult merely my personal ideas in the preparation of drugs, I would triturate *every* substance, not only the so-called inert (minerals and so on), but I would prefer to pass every drug first through the process of trituration. A few words only on the theory. If any coarse and dry substance is triturated or pulverized by *itself*, i. e. without any admixture, it will continue to be divided and subdivided to a certain large but yet limited extent; it will become at length so fine that instead of farther division some particles will again unite. The pressure of the pestle or blows that sever some parts, will unite others or press them again together, so that the average size of the parts remain unchanged. To carry on the process of dividing and subdividing, and to prevent this reuniting of the particles, Hahnemann introduced another substance, that hard indifferent body, *Sugar of Milk*, and with this and the original drug already in finely pulverized form, carried on the division

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until it could be divided no further, because the dividing indifferent body had reached *its* limit of division. Hahnemann now added again some of the same indifferent body not yet so finely divided, and through this addition a still finer division was effected, until the limit was again reached; another addition of the indifferent body and a further subdivision of the drug, and so on again and again, and again. At last the particles of the drug become so fine that the gross and heavy particles of water or alcohol will prevent their settling down, and they will float through these media with as much ease as dust in a sunbeam. And now they can be said to be in a state of solubility. That Hahnemann should have selected sugar of milk for this process of comminution is to be considered as a marvelous thing. Sugar of Milk is a product of animal life, it constitutes as stated, a large percentage of the mother's milk; no other substance would have answered as well, for in a state of crystalization its sharp and flinty crystals do not only grind up all the inert and hard minerals into the most inconceivably fine powder, but in a state of solution it is assimilated most easily to the human body, it carries as it were those gross inert minerals nearer to animal life: it vitalizes them.

But let us now come to the process itself, and let us hear what Hahnemann says about it. We read in Hahnemann's Chronic Diseases, Vol. I., p. 184:

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"Of these pulverized substances, you take one grain; mercury may be used in the liquid state; of petroleum, you take one drop instead of one grain. Pour this grain into an unglazed porcelain mortar. Then you take thirty-three grains of Sugar of Milk, and mix them with the drug by triturating the mass with some force for about six minutes by means of a porcelain pestle; before you triturate, stir the mass for a little while with a spatula. Having triturated the mass, you stir it again for about four minutes, scraping up that part which covers the bottom of the porcelain mortar, and also that which adheres to the pestle; then you triturate again with greater force for six minutes, without, however, adding anything new. This mass you scrape up again for four minutes, add another thirty-three grains of Sugar of Milk, stir the new compound for a while with the spatula, then triturate it for six minutes with the pestle, scrape it up for four minutes, triturate again with great force for six minutes, scrape the mass up again for four minutes, then add the last thirty-three grains of Sugar of Milk, and with this last added portion proceed as with the two former. This powder you enclose in a well-corked glass, and mark it with the name of the substance, and the figure $_{100}$, to show that this is the one hundredth potency of the substance.

"In order to prepare the degree $_{10000}$, you take one grain of the degree $_{100}$, and add to it thirty-three grains of Sugar of Milk. Stir up this mass for a moment with the spatula. Then triturate it for six minutes, stir it up for four minutes, triturate again for six minutes, and then stir up again for four. After this you add the second thirty-three grains of Sugar of Milk, proceed then as before; afterwards add the last thirty-three grains of Sugar of Milk, stir up and triturate again as before, and enclose the mass in a well corked vial marked $_{10000}$.

"To prepare the degree $_{1000000}$ or $_{1}$, you take one grain of the degree $_{10000}$, and go through the processes of stirring and triturating in the same way as before, employing upwards of an hour for the preparation of each different potency.

"For the sake of establishing a sort of uniformity in preparing Homœopathic remedies, and especially the anti-psorics, I never carry the process of triturating above the millionth degree.

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From this degree I derive the dilutions in their various degrees of potency.

"For the process of trituration a certain force should be employed; not too much, however, to cause the mass to adhere too tenaciously to the mortar to be scraped up in the space of four minutes."

The details of the mode of triturating prescribed by Hahnemann, have been somewhat modified, and had to be on account of the adoption of the decimal scale. The kind of mortar the early Homœopaths used was about three inches wide, and no doubt just the thing for one hundred grains, but as Homœopathy has "spread like the green bay tree," the size of the mortars has spread also.

By way of parenthesis here a word on the theory of potentization. Some contend that the original drug contains a magnetic or spiritual power, which is the truly curative power of the drug, a kind of spiritual sphere set free by the triturating and shaking process. Others on the contrary contend that the development of the curative powers of a drug is a purely mechanical thing, and that the breaking up of the constituent particles of the drug constitutes that development. The former call the successive developments of the original substance: dynamizations, potentizations, potencies; but the latter call those developments attenuations, dilutions. We hear of the first, second dilution of the third or sixth attenuation, and on the other hand of the 200 potency, the 8000 potency, and the 40,000 potency.

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These two different opinions in our school have also had certain practical effects in the preparation of our drugs; the one side of the house insisting more on the exact measurement, exact weight and exact proportion of its lower developments, whereas the other side is satisfied perhaps with somewhat less exact weight and measurement, provided the developments are carried high enough. Pharmaceutists have to be as exact as possible, and the same course may be inculcated on all, no matter how low or how high they may carry their medicines.

But to come to the process of decimal trituration.

To make the first decimal trituration, we weigh out 900 grains of Sugar of Milk, that is we weigh out three times 300 grains. Then we weigh out 100 grains of the crude substance. Mark: 100 grains of the drug and 900 grains of Sugar of Milk, together 1000 grains; 100 grains of the substance therefore represents one-tenth of the whole preparation.

Of the sugar we take 300 grains, carry it around in the mortar a little with the pestle, add the 100 grains of the drug and triturate until it is a well mixed mass. We frequently change the position of the mortar by turning it round about one-fifth or one-sixth part of a circle, and scrape the mass with a bone spatula occasionally. The duration of this first process cannot be limited by a general rule, it depends upon the greater or lesser solidity of the drug. It is well not to cease before half an hour has passed. After an apparently homogene-

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ous mass has been produced, we add the other 300 grains, and continue the trituration for not less than twenty minutes, rotating the mortar and occasionally scraping together. Now we add the last 300 grains (of the original 900 grains sugar), triturate in the same way, and the trituration, that is the first trituration is done. We scrape the contents of the mortar well from the sides and bottom of the mortar, and from the pestle, empty the contents on a clean sheet of paper (never use the same paper for two triturations), and transfer it to a bottle, which must be perfectly *dry*. This preparation, as just said, contains one-tenth part of the original drug in every part of it; we mark it $\frac{1}{10}$ or I. X.

To make the second decimal trituration, we weigh 100 grains of the first trituration and 900 grains (i. e. three times 300 grains) of Sugar of Milk. We take 300 grains of the sugar and carry that around in the mortar as the first time, add the 100 grains of the first trituration and triturate for twenty minutes, add next 300 grains sugar and triturate again for twenty minutes. Of course we have to rotate the mortar, and as soon as we see or feel that any portion of the mass adheres to the pestle or the mortar, we scrape it together. After having placed into the mortar the last 300 grains and triturated the whole twenty minutes more, the second decimal trituration is done. This now contains in each of its particles one hundredth ($\frac{1}{100}$) part of the original substance; we mark it 2.X. or I. This is equal to the first Hahnemann-

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nian, with the difference that it took an hour longer to make it, and if triturating avails anything, it is a better preparation.

The third, fourth, fifth and sixth decimal triturations are made in the same manner exactly as the second, using always the preceeding trituration for the start. The third contains the $\frac{1}{1000}$ (one thousandth) part of the original drug and is marked 3x; the fourth decimal the $\frac{1}{10000}$ part, and is therefore equal to the second Hahnemannian; this is marked according to the decimal scale 4x, or according to the centesimal 2. The fifth decimal contains the $\frac{1}{100000}$ part, and the sixth decimal the millionth part of the original drug. The last is marked 6x, or according to the centesimal of Hahnemann 3.

To repeat:

The substance or drug is marked 0.

1 part of the drug and 9 of sugar, makes $\frac{1}{10}$ marked 1x.

$\frac{1}{10}$ " " " " $\frac{9}{10}$ " " $\frac{1}{100}$ " 2x., or 1 Hahnemann.

$\frac{1}{100}$ of drug and $\frac{9}{100}$ of sugar, makes $\frac{1}{1000}$ marked 3x.

$\frac{1}{1000}$ " " $\frac{9}{1000}$ " " $\frac{1}{10000}$ " 4x., or 2 Hahnemann.

$\frac{1}{10000}$ of drug and $\frac{9}{10000}$ of sugar, makes $\frac{1}{100000}$ marked 5x.

$\frac{1}{100000}$ " " $\frac{9}{100000}$ " " $\frac{1}{1000000}$ " 6x., or 3 Hahnemann.

If your mortar be of sufficient capacity you may safely take double the quantity; a mortar measuring two quarts will suffice for three ounces (about 1500 grains of trituration. All triturations are now made by the decimal scale, or up to the sixth decimal, i. e., the third centesimal. As a general

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rule, hard substances are triturated more easily than soft ones. Zincum and Iridium, the hardest bodies we have to deal with, show after an hour under a microscope much more equal molecules than Plumbum or Graphites, or Mercurius vivus. When triturating precipitated lead, you have to carry your pestle around very softly at the beginning if you ever wish to get it right; Graphites you have to give at least double time in the first decimal, and for Mercurius vivus four or five times as long before you can reduce it.

The above general rules of triturating, have in practice sometimes to be varied according to the substance to be triturated. As for example, for volatile substances or for those which are affected by exposure to the atmosphere as Oleum Animale and Protiodite of Mercury, you have to use some discretion; they must be triturated quickly in a darkened room.

If you wish to preserve iron in its metallic state, you have to drive out the least particle of moisture from your mortar and your sugar, and triturate, keeping the mortar continually warm.

Physicians sometimes want impossibilities in triturations; in triturating yourselves or in ordering from pharmacies, you should consider the nature of the chemical. We have often had orders for Calcarea caustica in trituration; if this is triturated, you may depend upon it that there is no caustic about that Calcarea. Sometimes highly hygroscopic salts (that is such as eagerly absorb moisture from the atmosphere) are ordered in the

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lowest trituration as Kali carb., Kali hydr., or Calcarea chlorata. By sharply drying the sugar and keeping the mortar hot while triturating, this can of course be made and leave the shop good enough, but after the physician has kept his bottle for some time, opening it repeatedly, the preparation will stick together and he cannot get it out of his bottle, and if given to the patient they will make smeary, unsightly powders. If such drugs must be given very low, they ought to be given in watery solution.

The mortar, sugar and bottle must be dry, if you wish the trituration to keep.

Pharmacists have to keep a mortar for each substance; this rule should be understood and enforced, the cleaning in this case is simple enough, as it is only necessary to rinse out the previous trituration; but in your practice you will most likely have but one or two mortars, and in cleaning them out for the different triturations you may want to make, you cannot be too careful. Be not saving in the use of the brush, sand, hot and cold water. With some metals you can see even without a microscope, that you did not get rid of them by these means; you have then to use nitric or another suitable acid, and let that dissolve the traces of it. After this you have to remove of course the acid which is done in most cases most effectually by placing the mortar on a somewhat inclined position under the hydrant.*

* No cleaning is ever sufficient. We have microscopic evidence of that.

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We have now to transfer the triturations into liquid potencies, let us hear what Hahnemann says on that process:

"Sugar of Milk cannot be dissolved in pure alcohol; this is the reason why the first dilution should be composed of one-half water and one-half alcohol.

"To one grain of the millionth trituration you add fifty drops of distilled water, and turn the vial several times around its axis. By this means the Sugar of Milk becomes dissolved. Then you add fifty drops of good alcohol, and shake the vial twice, first carrying the arm up and then down. Only two-thirds of the vial ought to be filled with the solution.

"This vial is then marked with the name of the medicine, and the number $\overline{100}$ I. Of this solution you take one drop, and mix it with 99 or 100 drops of pure alcohol, shaking the vial twice after it has been corked. This vial is marked $\overline{10000}$ I. Of this solution you again take one drop, mixing it with 99 or 100 drops of pure alcohol. Then shake the vial twice, and mark it $\overline{10000}$ I. Of this potency you again take a drop, and mix it with 99 or 100 drops of pure alcohol, shaking this third vial twice, and marking it II. In the same way you continue the preparation and marking of the higher potencies $\overline{100}$ II, $\overline{10000}$ II, III. The intermediate vials are put in perpendicular boxes, and are kept in the dark in order not to be affected by the light of day. In practice, only the full vials are used.

"The shaking being accomplished by means of moderate strokes with the arm, it is expedient that the vials should be large enough to have only two-thirds of their volume filled with the hundred drops."

This explains itself, but let us make the experiment. Here is one grain of the third trituration, we place it in this bottle and add 50 drops of water, agitate it, add 50 drops of alcohol and give twenty powerful strokes.

Make also the fifth and go on and show to the 30th.

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We are not afraid any more to give our potencies a good shaking; Hahnemann, as you heard, directs to give only two shakes, and the early Homœopaths were quite afraid of it; some counting even each succeeding stroke one potency.

One of those early Homœopaths in a dissertation on potencies published in the Archive, cautions his fellow practitioners, especially the country physicians as these had frequently to go on horseback, against carrying in their pocket cases liquid potencies. The trotting motion of the horse, he thought, would be potent enough to potentize every medicine which they carried with them higher up.

If you wish to raise your potencies all the way by the decimal scale, you have to take 10 grains of the sixth decimal (to start with a lower decimal trituration as the third, fourth or fifth, will absolutely make an inferior preparation), and add to this 90 drops of water, shake and pour from this 10 drops into a bottle containing 40 drops of water and 50 of alcohol, shake and from this take 10 drops into a bottle containing 90 drops of pure alcohol. The first of the above would then be the seventh decimal, the next the 8X, answering to Hahnemann's fourth and the following the 9X. As this ninth was made, so you continue as high up as you please; however in potentizing liquids, the decimal scale is made use of almost exclusively for the lower potencies, for the higher potencies the centesimal scale is understood; for example, if you speak of the 30th potency, every one will under-

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stand the Hahnemannian or centesimal, unless special mention is made to the contrary.

Hahnemann advised his adherents, for the sake of uniformity of preparations, to stop at the 30th potency, and for many years they were not extended any further. But already in Hahnemann's life time, Korsakoff made higher dynamyzations, and Hahnemann did not deny their efficacy. Korsakoff while following the prescriptions of Hahnemann, used but one bottle for each remedy for all higher potencies, always emptying out the contents of the previous potency, relying that one or two drops of the liquid (at any rate a sufficient quantity), would adhere to the sides of the bottle to start the next potency with the addition of 100 drops. Korsakoff also employed water for potentizing instead of alcohol. Jenichen, whom we may call the discoverer of high potencies, carried them much further. After first trying various proportions, he finally adopted the following, and most of his medicines are prepared according to it. He potentized in the proportion of 1 to 300; and this with alcohol of the strength of 80° Richter, up to the 900th potency; to every such potency he gave ten powerful shakes. From the 900th upwards he used water and made them in the proportion of 2 to 12,000; he also gave those higher degrees fifteen or more powerful shakes, and the higher his potencies went, the more shakes he gave to each single potency, so that he gave to the 40,000th Arsenic over one and a half million of shakes. He ran up his potencies like Korsakoff

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in one bottle, emptying each potency out almost to dryness, before he added the water for the next potency, so that I understand that the 2 to 12,000 is an approximation or guess as near as such things can be made to exact measure.

It seems to me that the only legitimate way to prepare high potencies is to follow Hahnemann's method; or if anyone wishes to prepare high potencies according to his own personal notions, he ought to abstain from giving his preparations the same numbers or designations as those prepared according to the master's rule. This can be done, I have myself carried many remedies to the 200th, and my neighbor in business even to the 1000th potency. These were every one prepared with alcohol in proportion of 1 to 100. It is of course a laborious process. Now, while Jenichen spent ten times as much labor to reach a potency which he designated as a certain Hahnemannian preparation, another or others try to reach the goal without any effort on their part. Little positive, it is true, is known about these processes; so much the worse for those preparations.

When writing the above lecture, I had no idea that one day I should be called to account for the very thing which I myself so heartily censured; but this was done, and I take now the opportunity to set myself right before the reader.

In the British Journal, April number, 1876, in a criticism on Dr. Skinner's Pamphlet, great exception is taken to Sulphur M. M., and in connection with this preparation, the critic makes several mistatements which should be corrected.

The critic is mistaken when he says that these M. M. are extensively advertised in the catalogues of Boericke & Tafel; he most

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likely never saw any of our catalogues or he would not have made this assertion, at any rate they are not mentioned therein. In Boericke & Tafel's catalogue are only articles for *sale*, but these M. M. are not for sale, and the only public mention they ever had were once in our Bulletin when they were offered *gratis*.

These M. M. were an experiment which I made for my own gratification, to see whether bottom could be reached in potentizing (or diluting if you prefer it). For this purpose I constructed a machine and did not stop until five remedies were carried up to the millionth. These millionths and any below from the five thousandth upwards, I offered gratis to those of my professional friends who would make trial of them and to all who applied I gave these preparations together with a description and photograph of the machine.

There certainly cannot be any objection to making experiments, and I claim this to be a perfectly legitimate one. What I asked in return was that I should receive reports as to the results, favorable as well as unfavorable, just as it might happen. Some favorable results have found their way into the journals and also it appears into the pamphlet of Dr. Skinner, which latter seems to have excited the critic, so that he attacks the character of the one who made the medicines. This is a very poor argument and, as I have shown, not borne out by the facts. No superiority nor any special claim was attached to those M. M., *they were given out for whatever they might be worth*, and if that critic considered them a monstrosity or an impossibility, it would have been decidedly more to the point if he could have said from experience, they were tried and found good for nothing; a result which I would have accepted just as well as a favorable one.

I would add, that those five medicines were made about three years ago, and none have ever been added to them since.

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LECTURE THIRD.

GENTLEMEN:

In our last lecture we treated of trituration, that great process in Homœopathic Pharmacy, by which not only all substances are made soluble, but by which even substances *inert* in their crude state are developed into active medicines, and by which every drug subjected to it is brought nearer to animal life.

We come now to those chemicals which in their crude state are soluble to a greater or less degree in water or alcohol. Of these we make solutions; a process which is very simple and therefore adopted by many. But as I have said before, I give the preference and adhere as far as it can be done to the mode of triturating with Sugar of Milk even those chemicals which are soluble.

Still, as I have shown you, we have to use discretion; therefore I say, "as far as it can be done." Hygroscopic bodies, such as some of the potash and soda preparations, cannot be triturated and dispensed in a low trituration. That is, they can be triturated in succession to the third and sixth trituration, and will keep in this form, but you will

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always have trouble if you dispense such preparations as Kali carb. or hydriodic, Natrum phosph., etc., in the first and second trituration. Argentum nitr. is also one of the drugs which is often demanded in the first and second trituration; it will not keep, as the nitrate of silver acts on the Sugar of Milk and by it of course is decomposed itself. However, this is an exception; triturations of salts as a rule, keep longer than their solutions in water will.

To make a *solution* we take to *one* part of the substance, nine PARTS OF WATER (or alcohol in some instances), this will make the first decimal dilution. Very often these solutions are called mother tinctures, but they are not, and from the example I show you now, you will see that they are not, and that they cannot be so called. Ferrum sulphuricum is dispensed both in trituration and solution. We triturate it according to rule, one to nine, calling it the first decimal trituration, and this preparation contains the tenth part of the original salt; from this first we make the second and third and so on, containing the hundredth and the thousandth part. Suppose sulphate of iron is wanted in solution as it is sometimes demanded under the name of tincture, (and a very poor preparation it is) we merely change the vehicle and are by no means justified in calling it the tincture, and in starting our dilutions from it. With substances less soluble, like Arsenicum alb. it is worse yet, and this may really cause confusion. By long continued boiling about

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one-tenth of Arsenious acid is dissolved in water, but after cooling, the greater part crystallizes out again, so that a cold solution of Arsenic represents in strength about the second decimal. This solution is marked by some 0, and if dilutions would be started from it, the second X dilution would be the ten thousandth part, whereas the second X trituration would be the one hundredth part. You see what a confusion this would make. Sulphur and Phosphorus come under the same rule.

In order to guard against such confusion and irregularities, we have adopted in our business the rule to call them by different names; we have Arsenicum and Tinctura Arsenici; we have Sulphur and Tinctura Sulphuris and so on. Every physician therefore knows then exactly what he receives and has therefore the chance of making his dilutions in exact proportion with each other. It is the universal rule that each progressive potency must represent *exactly* the decimal or centesimal fraction of the particle of the original drug contained. And this is so understood all the world over.

Some chemicals will not dissolve fully in the proportion of one to nine, we therefore add ten parts more of water when they will; this will give the solution the strength of one-twentieth, and to make the next dilution from this, we take one part of the preparation, one-twentieth, to four parts of the vehicle. This fifth of the twentieth part is the hundredth of the original drug, and after shaking *lege artis* we mark it X2. or 1.

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Like all our preparations, the solutions must be made and kept at a moderate temperature. If exposed to severe cold, some crystals may form and thus the exact proportion will be destroyed; your solution will then be too *weak*. If kept too warm (country physicians often make use of the mantel piece over their fire places as a repositorium for medicines), they are apt to change altogether or evaporate partly, thus getting also out of proportion by becoming too *strong*. The best way therefore is, if a solution of a salt is desirable, to make it on the spot and just enough for immediate use.

The mineral acids, as Sulphuric, Nitric and Muriatic, are prepared according to the decimal scale, by taking of the strong acid one part to nine parts of *water*, for the second we take also *water* in the same proportion, and only for the third we take half water and alcohol. The fourth may be prepared the same as the third, only you may take pure alcohol. For the first three degrees of these acids you had better take glass stoppered bottles.

Fluoric acid acts on glass; in potentizing it, we cannot use glass bottles but have to use gutta percha bottles, which are easily obtainable.

We now proceed to the medicines prepared from PLANTS, which preparations we term tinctures. First a few words about their collection. In this we have, as mentioned in my first lecture to follow closely the provings, for this must be our first aim. But as our provings are by no means definite with

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all remedies, and as new remedies may continually be introduced, I will mention here a few principles for your guidance in the collection of plants.

We may take either the entire plant or the leaves, blossoms, stems, bark, wood, roots, fruits, seeds, or the fungi, moss, pollen, gums or balsams.

(*I would mention distinctly that I do not treat here of the products of plants obtained by chemical process like Chinin, Morphium, etc.; they are triturated without exception*). The plants should be gathered at proper periods, or when that part of the plant which we wish to obtain has attained its fullest growth. The young shoots have the least virtue, as we see from the poke, dandelion, asclepias and asparagus, which are eaten without harm as an article of diet.

Soil, climate and cultivation exert a remarkable influence on the properties of plants, and with the exception of the labiatæ, whose aroma becomes improved by cultivation, nearly all medicinal plants become deteriorated and useless as medicines by being cultivated. Plants found in their places of natural growth present the greatest degree of medicinal activity, consequently we have to gather these and no others.

Whole plants we gather just when they come into their greatest development, that is, just when they begin to flower. Of course all sickly looking, crooked, partially withered plants should be thrown aside; this also applies to any part of the plants which we may gather.

Roots must be collected according to the char-

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acter of the plant; thus the root of an annual plant will be best before the flowering has set in, for after the flowering the annual begins to die. It is *easiest* to gather the roots in the flowering season, but just at that time the roots are most likely least active. The roots of biennial plants are most active if collected shortly after the leaves are fallen off in the autumn of the first year; some recommend gathering the roots of biennials in the spring of the second year, but unless we mark the place of their growth in the previous year, it will be quite difficult to find them. The roots of perennial plants you will find most active from autumn, after the decay of the leaves until spring, before the new vegetable has drawn too much on the strength of the root. Roots gathered in the fall will suit people with allopathic notions in their heads better, because then they contain a minimum more of what is styled the active principle. I must say these old hard wooden roots, as they are in the fall, present very little life. I think more of roots gathered in the spring when they are full of sap, ready to start into new life and energy.

Bulbs we collect as soon as they are mature.

Stems, as in the case of Dulcamara, should be gathered before the flowers have been developed.

Barks we may get either in spring before flowering, or in autumn after the foliage has disappeared. In spring we find it much easier to detach the bark from the wood or stem. We have to use discretion in the selection of barks, as those

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which are too young or too old, have neither of them any great medicinal virtue.

Leaves should be collected as soon as they have become matured, and before the maturing of the fruits or seeds. It must be remembered that biennial plants do not perfect their leaves in the first year, consequently they must be gathered only during the second year.

Flowers we gather when they are just ready to open or when just opened; occasionally the buds are to be preferred to the expanded flower. They, as well as the leaves or the whole plant should be collected only when they are dry, that is, when no dew or rain is upon them. All foreign, decayed or inert matter should be carefully picked off; this applies to all parts, but to flowers in particular because they are the most delicate. We have further to examine whether they are not infested with bugs, beetles or other animals which, when not carefully removed will spoil the preparation entirely. I mention here particularly Arnica flowers, which, on the ground of their being infested with a small insect, similar in its action to Cantharis, are discarded by the Homœopathic School. At least we have for many years not made use of the flowers, using exclusively the roots for this tincture.

Berries, fruits and *seeds* are collected when ripe.

We have no certain general observations how far the time of the day or the position of the moon may be of consequence, but of *Rhus* for example, we know that it is most poisonous on afternoons of cloudy, sultry days.

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The plants must be cleansed from dust, dirt or mud, but we never wash them; (except the roots of water-plants) after carrying your plants or roots home, the earth around them will be dry enough to be removed perfectly by means of a brush. So much about the gathering of fresh plants; their tinctures are prepared in the following manner.

Class I.—Your plant or part of plant is cut into small particles, pounded in a wedgewood mortar, then placed into clean new linen cloth and the juice expressed by means of a press or by wringing the cloth. Weigh the expressed juice, and add to it an equal weight of strong alcohol in a glass jar. Set this aside for a week and then filter, when your tincture is ready. This is Hahnemann's prescription for making essences, and it has to be followed out with all plants of which the provings were obtained of preparations made as above, and may be done with all which are juicy. A great many tinctures of European plants are prepared that way and therefore have to be imported in that state of tincture or essence.

You will see that the juice of plants was considered by Hahnemann to contain all the active forces of the medicine, and this constitutes the original drug; the alcohol is added only to make the preparation keep. The tincture containing one part drug and one part alcohol, represents one half of the original drug, and in potentizing such a tincture, you have to take for the first decimal

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Class I.—The fundamental rules for this class are found in Hahnemann Mat. Med. pura, vol. i, under *Belladonna*.

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preparation twenty drops of tincture to eighty drops of dilute alcohol, or for the first centesimal preparation two drops of tincture to ninety-eight drops of dilute alcohol, i. e., half water and half alcohol, in order to make the first potency in either case containing strictly one tenth or one hundredth part of the original drug. Mark, I say dilute alcohol, for if you take strong alcohol you will get a sediment, showing that some parts of the tincture are thrown down, whereas your potency *must* always contain *all* that is in the tincture. That such a sediment contains only starchy matter of no medicinal virtue is no argument at all.

The next potency may be prepared like all the rest with strong alcohol.

Class II includes also mostly European plants, but such as are less juicy, from which the juice has to be extracted by means of two thirds of strong alcohol, the tincture of these therefore also represents one half of the original drug.

There are only few in this class and you will find them in the appended list. The first potencies are made in the same proportion as class first, that is, twenty to eighty for the first decimal, and two drops to ninety-eight drops for the first centesimal potency, but we take strong alcohol.

Class III includes a great many remedies, and it

Class II.—The fundamental rules for this class are found in Hahnemann Mat. Med. pura, vol. i, under *Thuja*.

Class III.—The fundamental rules for this class are found in Hahnemann Mat. Med. pura, vol. i, under *Scilla*.

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is this class with which we in this country have most to do, as all our American remedies are prepared in accordance with it. After having reduced the plant or part of the plant as before mentioned, and having weighed it, we add the double weight of alcohol to it. After two weeks the tincture is pressed out and filtered; it represents the sixth part of the drug (always considering the juice of the plant as the original drug), and in starting your dilutions have to take sixty drops of the tincture to forty of alcohol for the first decimal, or six drops of tincture and ninety-four of alcohol for the first centesimal dilution.

All the dry medicinal substances such as we generally obtain from the trade, are prepared according to Class IV. Have your substance well powdered or pounded, and after weighing it add five times its weight of alcohol. Let the well-closed bottle or jar stand for two weeks, pour off, press and filter, and your tincture is made. It represents the tenth part of the drug, and to make the first centesimal potency you take ten drops of the tincture to ninety of alcohol.

There are yet some other vegetable products which come under neither class, such as the resins, as Guaiacum. After powdering them and adding nine parts of strong alcohol they dissolve almost entirely; we therefore do not consider them as

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Class IV.—The fundamental rules for this class are found in Hahnemann Mat. Med. pura, under *Spigelia*, *Staphisagria*. For this class, according to Gruner's Pharmacopœia, the proportion of alcohol is nine parts to one of the drug.

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tinctures, but as alcoholic solutions, and treat them as the first decimal dilutions from which further potencies are made.

It is recommended in preparing tinctures according to rule III or IV to have jars large enough to permit the contents to be well shaken, this may be done during the maceration two or three times. Of course the maceration has to be effected at an ordinary medium temperature, in a room from which the direct rays of the sun are excluded.

So much about the general rules for the preparations from plants; we come now to those remedies taken from the ANIMAL KINGDOM.

The remedies heretofore taken from this kingdom are much less numerous than those derived from the other kingdoms of nature. The transformation of animal matter into remedial agents is done in the same way as with those from the lower kingdoms, i. e., either by trituration or by extracting a tincture and thus starting our potencies.

In some cases we make use of the entire animal as with Apis mel., Cantharis and Diadema of which tinctures are prepared according to Class IV. The excretory animal products, as Musk, Castoreum and Mephitis, are prepared also according to the same class and of course their first potencies also are prepared in accordance with the rule there given.

Triturations are made from the animal concretions, as the oyster shell (Calcarea carb.) Coral or Corallium rubrum. Triturations are also made of

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the various animal poisons, as Lachesis, Crotalus, Sepia, Apium virus (the poison of the bee).

Of Spongia tosta two preparations are officinal, the trituration and the tincture made according to Class IV representing the same strength as the first decimal trituration.

So much on general Pharmaceutics; in my former lectures I gave you the accentuation of each remedy and its synonyms, but as the American Institute has published both in pamphlet form, it would be unnecessary and rather tedious for me to repeat it. Moreover, many of the remedies will be mentioned as I go into special Pharmaceutics in my next lectures.

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A List of Fresh Plant Tinctures or Essences.

ARRANGED ACCORDING TO CLASSES.

List of IMPORTED Fresh Plant Tinctures.

CLASS.	CLASS.	CLASS.
I. Aconit. Lycoct.	I. Clematis erecta.	I. Phellandr. aq.
I. Aconit. nap.	III. Clematis vitalba.	III. Pimpinella.
III. Aconit. rad.	I. Colchicum.	III. Prunus padus.
III. Actæa spicata.	I. Conium mac.	II. Prunus spinosa.
III. Aethusa cynap.	III. Convolvulus arv.	I. Pulsatilla nigr.
III. Agaricus emet.	III. Cotyledon umb.	I. Ranunculus bulb.
III. Agnus castus.	I. Cyclamen Europ.	I. Ranunculus scel.
I. Anagallis ar.	III. Dictamus alb.	III. Salvia off.
II. Anthoxanth. odor.	I. Digitalis purp.	III. Sabina.
III. Aquilegia.	I. Drosera rotund.	III. Sambucus cortex.
III. Arnica mont.	III. Dulcamara.	I. Sambucus nigra.
III. Arnica rad.	I. Euonymus Europ.	II. Sedum acre.
III. Artemisia abrot.	II. Euphrasia off.	I. Sempervivum tect.
III. Artemisia absynth.	III. Filix masc.	III. Symphitum off.
I. Arum mac.	III. Fragaria vesca.	II. Taxus bacc.
III. Asclepias vincetox.	III. Gentiana lutea.	I. Teucrium marum verum.
III. Asperula odor.	I. Gratiola.	II. Thlaspi bursa past.
I. Belladonna.	I. Helleborus niger.	III. Tilia Europ.
I. Bellis perennis.	I. Hyoscyamus niger.	III. Trifolium fibr.
I. Bryonia alba.	III. Juglans regia.	III. Tussilago petasites.
III. Cactus grand.	I. Lactuca virosa.	II. Uva ursi.
III. Caladium seg.	I. Lamium alb.	II. Verbena off.
I. Calendula.	II. Laurocerasus.	II. Vinca minor.
I. Caltha pal.	I. Menianthes trif.	I. Viola odor.
III. Carduus bened.	II. Mercurialis per.	III. Viola tricolor.
I. Chamomilla vulg.	II. Mezereum.	III. Viscum alb.
III. Chenopodium anth.	I. Oenanthe croc.	
I. Cicuta virosa.	I. Paris quadrif.	

List of AMERICAN Fresh Plant Tinctures.

ALL PREPARED ACCORDING TO CLASS III.

Abies Canad.	Dioscorea vill.	Kalmia lat.	Rhus toxicod.
Actaea racem.	Epigaea repens.	Lachnanthes tinct.	Rhus venen.
Aesculus hipp.	Equisetum hyem.	Leptandra virg.	Ricinus comm. fol.
Agave Amer.	Erechtites hieracif.	Lilium tigr.	Robinia Pseud.
Ailanthus gland.	Erigeron Can.	Lobelia card.	Rudbekia hirta.
Aletris farin.	Eryngium aq.	Lobelia coerul.	Rumex crispus.
Alnus rubr.	Eucalyptus glob.	Lobelia infl.	Ruta graveolens.
Ampelopsis quinq.	Euonimus atrop.	Lycopus virg.	Sambucus eb.
Apocynum cann.	Eupatorium arom.	Mentha pip.	Sanguinaria.
Apocynum andros.	Eupatorium perfol.	Menispermum can.	Sarracenia purp.
Aralia racem.	Eupatorium purp.	Millefolium.	Scrofularia nod.
Arum tryphill.	Euphorb. coroll.	Mitchella repens.	Scutella ra later.
Asarum Can.	Fagopyrum escul.	Myosotis symph.	Senecio aureus.
Asclepias inc.	Frasera carol.	Myrcia cerif.	Senecio gracilis.
Asclepias tub.	Fucus vesiculosus.	Myrtus comm.	Silphium lacin.
Asparagus.	Galium aparine.	Nabulus serp.	Stillingia syl.
Baptisia tinct.	Gelseminum nitid.	Nepeta cat.	Tanacetum vulg.
Canchalagua.	Geranium mac.	Nymphaea odor.	Taraxacum.
Cannabis sativa.	Gnaphalium pol.	Oenothera biennis.	Thaspium aur.
Castanea vesca.	Gossypium.	Opuntia vulg.	Thuja occid.
Caulophyllum thal.	Gymnocladus Can.	Origanum vulg.	Trifolium prat.
Ceanothus Amer.	Grindelia rob.	Ostrya virg.	Trillium pend.
Chelidonium maj.	Hamamelis virg.	Passiflora inc.	Triosteum perf.
Chelone glabra.	Hedeoma pul.	Phytolacca dec.	Urtica dioica.
Chimaphila umb.	Helonias dioica.	Plantago maj.	Veratrum viride.
Cimicifuga racem.	Hydrastis Can.	Pinus sylvestris.	Verbena hast.
Cistus Canad.	Hydrophyllum virg.	Podophyllum pelt.	Viburnum opul.
Clematis virg.	Hypericum perfor.	Polygonum punct.	Viburnum prunif.
Collinsonia Can.	Iberis amara.	Pothos foetid.	Xanthoxyl. frax.
Cornus circin.	Ilex opaca.	Populus tremul.	Yucca.
Cornus florida.	Inula.	Ptelea trif.	Zizia aurea.
Cornus sericia.	Iris versicolor.	Pulsatilla nut.	
Cypripedium pub.	Juglans cin.	Rhus glabee.	
Datura arbor.	Juniperus com.	Rhus radicans.	

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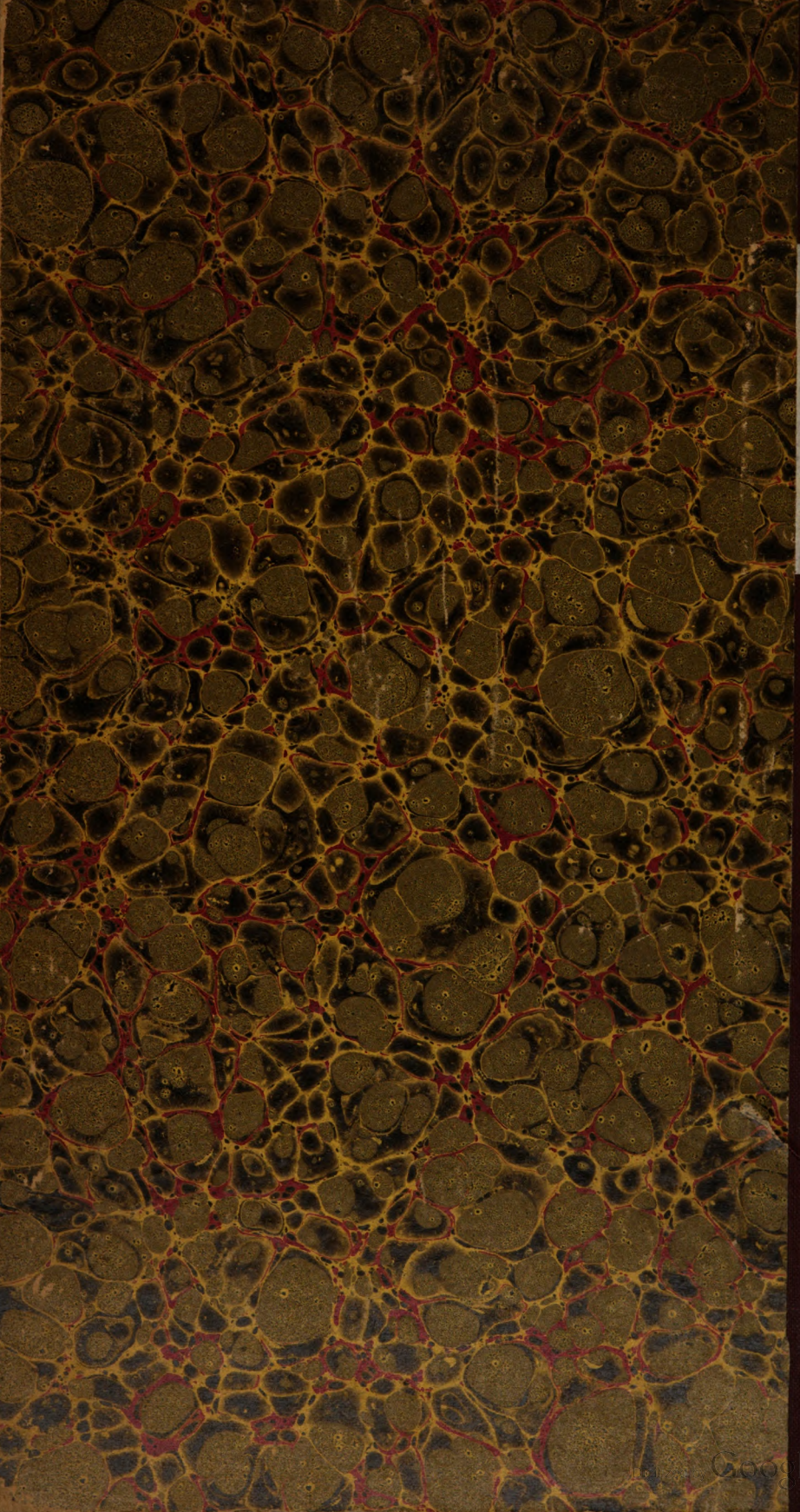
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